Ann Arbor Public Schools

Construction Company

April 11, 2005

Re: Request for Qualifications and Proposals for Professional Commissioning Services
New Ann Arbor High School Bid Package 01-04 – Commissioning Services
Ann Arbor Public Schools 2004 Bond Program Bid # 05-006-860

Please provide a proposal to perform the work described herein. All proposals are to be submitted to Ann Arbor Public Schools (AAPS/Owner) in the format requested and at the following address no later than **11:00 am (EST) Friday, April 29, 2005.** Address proposals to:

Office of the Bond Director
Ann Arbor Public Schools c/o Granger Construction Company
2555 South State Street
Ann Arbor, MI 48106
Attention Ms. Julianne Chard, Bond Director, whose email is jchard@aaps.k12.mi.us

Proposals in MS WORD, .PDF or text file format are to be submitted by the above time and date **by electronic mail** (email) to Ms. Julianne Chard, Bond Director, AAPS, at the above email address and copied concurrently to their agent and Construction Manager (CM) Granger Construction Company, Attention: Jerald S. Brand at jbrand@grangerconstruction.com. Economy of preparation is valued. Company brochures and literature may be sought from the firm or firms, which are interviewed (if Owner elects to interview) to provide this professional service, but are not needed in the proposal. If email is not possible, written proposals will be accepted. Written proposals are to be in sealed envelopes with,

"**New Ann Arbor High School - Bid Number** 05-006-860
Bid Package 01-04 Commissioning Bid Enclosed – Attn: Julianne Chard,"

prominently displayed on the envelope. AAPS will not guarantee that proposals failing to display this information will not be opened prior to the due date and time. Emailed proposals should use this same header as the subject header of your email. Regardless of which bid tender method is selected, timely receipt of proposals remains the Bidder's responsibility. The CM will provide notice of receipt of bids the following day by email. Bidders must inspect the schematic design documents in preparing their proposals. Bidders must include all base bid services requested and quote any requested alternates.

Please advise upon receipt of this RFP that your firm will or will not provide a proposal and confirm if your proposal can be sent by email. AAPS requests all pre-proposal correspondence and communication regarding this project be forwarded to the CM to the attention of Jerald S. Brand, Project Director at 734-216-4230 mobile / 734-944-0181 fax or by E-Mail (preferred) at jbrand@grangerconstruction.com. The Architect (A/E) is Mitchell and Mouat Architects/TMP Associates (contact: Richard Mitchell) of Ann Arbor. The Mechanical and Electrical Engineer is Peter Basso Associates, Inc. (contact: Derek Crowe) of Troy. The Civil Engineer is Beckett and Raeder Inc. (contact: Alan Cruz) of Ann Arbor.

The Ann Arbor Board of Education also recognizes a diverse community exists in Ann Arbor, and it is therefore of particular interest to AAPS to promote supplier diversity and to engage the firms who reflect the constituency of Ann Arbor Public Schools. AAPS therefore solicits the proposals and participation of qualified minority, female and other historically underutilized firms, and those qualified local area firms who maintain offices within the District for the professional services of this proposal.

RFQ Intent- After review of proposals received, AAPS reserves the right to award directly under its standard professional services agreement or to interview a qualified firm or firms to be considered based upon the proposal submittal(s), the firm providing the most advantageous combination of timeliness of services, professional expertise, cost, and quality. AAPS reserves its rights to waive any irregularity in proposals, and to accept, decline to accept, or reject outright any or all proposals as it deems is in its best interests. The Owner reserves its rights to waive any irregularity in proposals, and to accept, or decline to accept, any or all proposals as it deems is in its best interests.

Important issues of proposal evaluation will be:

1- The review and input comments of the proposing Commissioning Consultant (CxC) with respect to the Schematic Design documents provided with this RFP, and
2- The ability for the CxC to become knowledgeable of the project and to promptly begin work is a key criterion for selection, and is of crucial importance to AAPS
3- The means and methods by which the proposing CxC will describe how the CxC will assist the Owner and the project team to meet all Leadership in Energy and Environmental Design (LEED™) 2.1 requirements for the Fundamental Building Systems Commissioning (EAp 1) requirements and Additional Commissioning requirements (EAc 3), and
4- The ability for this firm to join the project during the design process and work as an effective member of the Owner's project team with a keen focus on the Owner's best interests and to ensure that appropriate yet cost effective commissioning is carried through the design phase and into construction.

To accomplish this, the CxC must become keenly aware of the Owner's intent, the A/E's design response, and the CM's construction management and sequencing plans, in developing and implementing its commissioning specification and plan. This plan must provide a trouble-free start-up of the project systems and in turn serve the Owner well for years to come.

Objectives– Ann Arbor Public Schools is planning for expected opening of its new high school in August 2007. The Owner wishes to receive qualifications and proposals for Professional Commissioning services to provide a complete Commissioning Plan with Implementation Services from an engineering firm expert in preparing such studies. During the design phase the CxC is expected to support the A/E in developing design criteria to support effective commissioning. During the construction phase the CxC is expected to assist the CM in leading the trade contractors by implementing processes for effective and efficient start-up and commissioning of the new high school. The Consultant shall provide all planning, implementation and documentation of the commissioning effort. The trade contractors will have a scope of work contract obligation to work cooperatively with a Commissioning Consultant and they will be obligated to provide the labor and equipment necessary to operate the systems and to provide test and retest effort to support the CxC. However given the expertise and efficiency of the professional systems the CxC is expected to bring to the team, it is intended the CxC will provide all tracking systems, documentation effort to record the commissioning effort and professional attestation that the commissioning effort is accurate and complete. The CxC shall also define the cost savings provided by the effort in its final commissioning plan report. Commissioning approaches consistent with ASHRAE and LEED guidelines are considered appropriate. In Appendix A, a sample commissioning specification developed for similar guidelines should be reviewed for scope content, to assure the proposal of the CxC includes this as a minimum scope of services.

The objective of the Owner in commissioning this school facility is to confirm and document that it fulfills the functional and performance requirements of the building Owner as designed by the A/E team. To reach this goal, it is necessary for the CxC's process to determine and understand the A/E design response and the planned performance criteria for each functional space given its planned occupancy, and to establish and document the Owner's usage criteria for system function, performance and maintainability. The CxC will review the Design/Construction Documents once prior to the completion of Design Development and again prior to the completion of Construction Documents. After both document reviews the CxC will prepare a written report and meet with the Owner, CM and A/E to discuss their findings and to help consider ways to incorporate any necessary revisions into the Documents. The last

work activity of the design phase will be for the CxC to develop a Commissioning Plan for incorporation into the construction documents.

Once the criteria are defined within the Commissioning Plan as approved, the CxC must verify and document compliance with these criteria throughout construction, start-up, and the initial period of operation. Primary roles of the CxC during the construction acceptance phase in consultation with the CM and the A/E are to review key submittals, to develop and coordinate executing a full range functional performance testing and acceptance criteria, which includes, but is not limited to, observing and documenting all systems' performance to ensure that systems are functioning in accordance with the owner's objectives and the contract documents. The CxC will assist the CM and the A/E with problem solving or addressing non-conformance issues or deficiencies. The Owner is committed to commissioning this facility with a CxC to ensure that all systems are well designed, complete per the contract documents and functioning upon occupancy, providing energy savings, increased comfort to building users, and that building staff have adequate system documentation and training.

General Project Information – AAPS is planning to develop an existing site, in the northwest area of the city, into a new high school. The site is an undeveloped parcel at the NE corner of Maple Road and M-14 within Ann Arbor Township. The District expects that the property will be annexed into the City of Ann Arbor to gain city utilities. The A/E team has designed this structure under the following criteria and building codes:

-1999 Michigan School Fire Safety Rules (1997 Life Safety Code, plus amendments and policy letters)
- Michigan Building code 2003
- Michigan Plumbing code 2003
- Michigan Mechanical Code 2003
-1999 ASHRAE 90.1 Energy Standard for Buildings
- 2002 National Electrical Code
(plus amendments, Part 8) (ASME A17.1-2000, ASME A18.1-1999 & A18.1A, Plus amendments)
- Michigan Boiler Rules (ASME Boiler and Pressure Vessel Code, 2001 Edition, plus addenda)

The development elements of the project are:

Development Element	Element Size	Student Capacity	Scheduled Substantial Completion
High School, a 3 story steel frame structure with large gym, pool and auditorium	374,000 sf	1600 students	August 2007
Football Stadium	1 each	3000 seats	June 2007
Team Room (at Stadium)	5000 sf	-	June 2007

Although involvement beyond site lighting on the site will be minimal, the Team Room at the Stadium shall be commissioned as a building. Also be aware the building systems will be started and used for construction heat as early as November 2006 in certain areas. A summary cost breakdown for the different parts of the project as well as a detailed construction schedule is attached as Appendix C and D respectively. The CxC engaged will also receive a complete project contact list, access to the CM's complete set of all approved submittals, and access to the CM's on-site files for their commissioning plan preparation.

Commissioning Consultant Qualifications – Please consider these issues in preparing the RFQ. It is not necessary to respond to every item if it is addressed within the RFQ. Generic brochures and large marketing submittals are not desired, response to the elements below will be sufficient.

1. In selecting a firm, consideration will be placed on the assigned personnel and to a lesser degree the general experience of the firm, and in providing commissioning services on projects of similar magnitude and complexity as the proposed project. Firms oriented to the design and construction field having depth, knowledge, and resources in principles of building system design,

construction management, scheduling, building operations, familiarity with State of Michigan, county, and local laws, ordinances, and codes will be viewed favorably.

2. Provide a brief overview description of the company, its ownership, its experience in commissioning, its staff resources, and its financial capability.
3. Provide an overview of the firm's insurance capabilities.
4. Provide a clear statement as to your past or current affiliation with the Owner, the CM, or the A/E and what on projects you may have worked together. Clearly describe any potential conflicts of interest you can perceive for your proposal on this project and if any, how they will be addressed. Michigan law requires that you disclose any relationship you may have with the Superintendent of Schools or any Board of Education member.
5. Provide the resumes or biographies of all personnel, which would be assigned to this project. Include proposed roles, hourly rates and fee schedules. Provide a clear statement as to the firm's commitment of these staff members if an agreement is negotiated.
6. Provide an example of the firm's experience in commissioning LEED projects. Completed projects are preferred, but those under construction are also acceptable.
7. Provide an example of the commissioning project management approach the CxC would suggest for a project of this nature. An outline, flow or bullet chart is acceptable.
8. Provide sample of one functional testing procedure, schedule for implementation, all executed checklists, misc. documentation and reports for a similar project (will be returned).
9. Provide a sample deficiency or issues list used for documentation and tracking purposes on a previous commissioning project (items 6 through 9 above may but need not be in the same example).
10. The CxC and its proposed team members shall satisfy the following requirements. Stipulate that the firm meets the following criteria by simple attestation to comply with all of the following elements of this item 10:
    a. Has experience (minimum of five years experience with projects of similar size and complexity) in:
        1) Design of mechanical systems.
        2) The operation, testing and troubleshooting of HVAC systems utilizing low pressure hydronic transfer systems, which are enabled, monitored and controlled with digital temperature/EMS controls.
        3) The operation, testing and troubleshooting of building automation systems, including energy management systems; monitoring instrumentation and controls systems, etc.
        4) The operation, testing and troubleshooting of refrigeration systems.
        5) The operation, testing and troubleshooting of laboratory hoods and equipment.
        6) The operation, testing and troubleshooting of life safety systems to include fire detection and alarm, egress pressurization, fire protection, etc. Note CM intends to work directly with the State of Michigan Office of Fire Safety to provide final testing and "commissioning" of the fire alarm system, therefore the CxC shall only be responsible to assure the HVAC system functions in coordination with fire alarm as specified.
        7) Testing, adjusting, and balancing (TAB) of HVAC systems.
        8) The operation, testing and troubleshooting of electrical systems, emergency power generators and automatic transfer switches insofar as they interface HVAC systems.
    b. CxC must maintain a local (Michigan) permanent office throughout the project.
    c. Has knowledge and experience in building operations and maintenance post construction.
    d. Has experience in energy-efficient equipment designs, and controls optimization for energy savings without compromise of occupant comfort.
    e. Has direct experience in monitoring and analyzing system operation using energy management control system trending and stand-alone data logging equipment. Review the technical specifications and certify that your on-site team members will have experience with all of the controls specified.
    f. That the team proposed has excellent verbal and written communication skills and capable of utilizing an Internet accessible communication and document management system
    g. Be highly organized and be able to work with Owner, A/E, CM and trade contractors.
    h. Be experienced in preparing or adapting commissioning specifications.
    i. Be experienced in preparing commissioning manuals which include:

1) Commissioning plan for each system/construction area.
2) Installation verification checklists for each piece of equipment.
3) Detail functional verification checklist for each piece of equipment and each system including acceptance criteria.

j. Participate in CCP, ISO or other appropriate quality assurance program.

Scope of Work for Design Phase of the Project- The following elements must be included in the RFQ Not to Exceed proposal amount. The CxC shall be responsible for providing commissioning services as described in the following paragraphs:

1. Schematic Design Phase (The proposing CxC shall provide review comment on the existing Schematic Design as a part of RFQ response).
   a. Mechanical/Plumbing
      1) Develop understanding of design intent.
      2) Comment on operational issues of the basic design, redundancy of the systems.
      3) Comment on overall air distribution and possible coordination issues.
      4) Comment on mechanical spaces for operational considerations and clearances
      5) Comment on major sequences of operation and smoke control scheme.
      6) Comment on one line diagrams for system risers
   b. Review and comment on other systems to the extent they may impact HVAC systems.
   c. Review and comment on any issues the design suggests with respect to LEED pre-requisite and additional commissioning.

2. Design Development Phase – As apart of it's Not to Exceed proposal, CxC is to provide comment to the Owner and professional team prior to the conclusion of design development with regard to commissioning, LEED, cost and owner operability issues.
   a. Mechanical/Plumbing
      1) Review and establish Owner's goals
      2) Ensure design intent.
      3) Review operational issues of the basic design
      4) Review redundancy of the systems.
      5) Review overall duct layout and possible coordination issues
      6) Review mechanical spaces for operational clearances
      7) Review major sequences of operation.
      8) Review smoke control scheme
      9) Review one line diagrams for system risers
   b. Electrical
      1) Develop understanding of design intent.
      2) Review typical lighting plans and lighting control schemes and their interface with HVAC system.
      3) Review emergency power system to the extent it interfaces with HVAC system.
   c. Fire Alarm
      1) Develop understanding of design intent.
      2) Review typical damper and other fire alarm controlled/sensed HVAC components and comment on interface with HVAC system.
      3) Review smoke zones and fire alarm zones and comment on interface with HVAC.
   d. LEED
      1) Assist in ensuring all reviewed components of design meet LEED requirements with regard to:
         1) SSc 4.2
         2) SSc 4.3
         3) SSc 4.4
         4) SSc 8
         5) WEc 1.1
         6) WEc 1.2
         7) WEc 3.1
         8) EAp 1

9) EAp 2
10) EAc 1
11) EAc 3
12) EAc 5
13) EQp 1
14) EQp 2
15) EQc 1
16) EQc 2
17) EQc 8.1

3. Construction Document Phase – CxC will be expected to attend bi-monthly design coordination meetings at TMP's or Owner's office. CxC is to provide comment to the professional team at the 90-95% completion of CD's with all DD requirements regarding commissioning, LEED, cost and owner operability issues as well as the following:
   a. Mechanical/ Plumbing
      1) Review floor plans for proper air flow, water flow to units
      2) Review systems to make sure there is enough equipment for proper TAB
      3) Review temperature control zoning.
      4) Review detailed sequence of operations
      5) Review mechanical details for operational issues.
      6) Ensure mechanical and plumbing are coordinated in regards to make up water and drains.
      7) Ensure no vents/exhausts are close to intakes.
      8) Review domestic hot water system.
      9) Review drains for proper pitch.
   b. Electrical
      1) Review generator details
      2) Review lighting control details
   c. Fire Alarm and Fire Protection Systems
      1) Review proper interconnection between systems
   d. LEED
      2) Assist in ensuring all reviewed components of design meet LEED requirements with regard to:
         1) SSc 4.2
         2) SSc 4.3
         3) SSc 4.4
         4) SSc 8
         5) WEc 1.1
         6) WEc 1.2
         7) WEc 3.1
         8) EAp 1
         9) EAp 2
         10) EAc 1
         11) EAc 3
         12) EAc 5
         13) EQp 1
         14) EQp 2
         15) EQc 1
         16) EQc 2
         17) EQc 8.1
   e. Commissioning Plan
      1) Assure commissioning plan is well coordinated between A/E's technical design and consistent with CM's scopes of work and general conditions.

Scope of Work for Construction Phase of the Project- Must be included in the RFP Not to Exceed proposal amount. The CxC shall be responsible for providing commissioning services as described in the following paragraphs:

1. Commissioning Plan
   a. Develop a commissioning plan for all equipment to be commissioned. Coordinate with the specifications of the A/E's. Seek input of the affected trade contractors. The commissioning plan will include a description of the responsibilities of all parties (e.g., Appendix A).

2. Develop a commissioning manual for inclusion with the project contract documents. Consider CM and A/E's comments. The commissioning manual will include:
   a. Copy of project design intent as written by the A/E.
   b. Commissioning plan for each system to be commissioned.
   c. Installation verification checklists for each piece of equipment and each system commissioned.
   d. Sequence of operation for each piece of equipment and each system commissioned.
   e. Functional verification test procedure/checklist for each piece of equipment and each system to be commissioned including expected range of performance, acceptance criteria and any calculations required, are to be shown. Functional test shall demonstrate all equipment/system modes of operation, alarms, safeties, etc.

3. Keep and maintain an updated copy of the commissioning manual onsite so it can be accessed by the CM, A/E and trade contractors with commissioning responsibilities.

4. Review and comment on any revisions to design intent document prepared by the A/E.

5. Review submittals for all equipment being commissioned

6. Perform the tasks and functions in the commissioning specifications.

7. Coordinate and direct the commissioning activities in a logical, sequential and efficient manner using consistent protocols and forms, centralized documentation, clear and regular communications and consultations with all necessary parties, frequently updated timelines and schedules and technical expertise. Communications shall be by email insofar as possible.

8. Conduct commissioning site inspections on a monthly or more frequent basis if needed, depending on construction phase.

9. Document all deficiencies observed to the Owner and the CM.

10. Coordinate the commissioning work with the trade contractors, CM, A/E and Owner, and ensure that commissioning activities are being scheduled into the CM's master schedule.

11. Revise, as necessary, the commissioning manual previously developed to incorporate the comments of the team and any changes approved by the A/E and the CM. CxC will be responsible for leading the trade contractors and assuring the implementation of the commissioning manual with all project trade contractors and vendors.

12. Plan and conduct monthly commissioning meetings and distribute minutes to the commissioning team. Minutes shall be distributed by email. In the last 6 months of the project meet more frequently as required. At commissioning meetings coordinate the work of the TAB contractor to minimize downtime for TAB in consultation with the mechanical, control and electrical contractors. Oversee the work of the TAB contractor in the field. Do not schedule TAB work unless alternative work is available should a particular component they are attempting to test or balance fail to work (i.e., have a plan B work area available). CM will resolve any disputes.

13. Request and review additional information required to perform commissioning tasks, including O&M materials, trade contractor start-up and checkout procedures. Before startup, gather and review the current control sequences and interlocks and work with trade contractors and design engineers until sufficient clarity has been obtained, in writing. Update functional test verification checklists as required.

14. Review requests for information and change orders for impact on commissioning and Owner's objectives.

15. Perform site visits, as necessary, to observe component and system installations. Attend selected planning and job-site meetings to obtain information on construction progress. Review construction-meeting minutes for revisions/substitutions relating to the commissioning process. Assist in resolving any discrepancies.

16. Review mechanical contractor and CM's records of HVAC piping pressure test/flushing and ductwork testing/cleaning, and witness a portion sufficient to be confident that proper procedures were followed. Comment on any testing documentation or procedures, which indicate further evaluation is warranted.

17. Document systems startup by reviewing start-up reports and by selected site observation.

18. Review with A/E and CM, testing, adjusting and balancing (TAB) execution plan. Audit air and water systems balancing by spot testing (20%/functional area) of diffusers, grilles, hoods, thermal devices, hydronic balancing valves and related equipment. Review and comment on TAB reports and document findings.

19. Coordinate, witness and document functional performance tests performed by installing trade contractors. Coordinate retesting as necessary until satisfactory performance is achieved. The functional testing shall include operating the system and components through each of the written sequences of operation, and other significant modes and sequences, including startup, shutdown, unoccupied mode, manual mode, staging, fire alarms, miscellaneous alarms, power failure, and security alarms when impacted and interlocks with other systems or equipment. Sensors and actuators shall be calibrated during construction check listing by the installing trade contractors, and checked by the CxC during functional testing.

20. Analyze functional performance trend logs and monitoring data to verify performance.

21. Tests on respective HVAC equipment shall be executed during both the heating and cooling season. However, some overriding of control values to simulate conditions shall be allowed. Functional testing shall be done using conventional manual methods, control system trend logs, and read-outs or stand-alone data loggers, to provide a high level of confidence in proper system function, as deemed appropriate by the CxC and the building Owner.

22. Maintain a master issues and resolution log. Report all issues as they occur directly to the CM. Provide directly to Owner and CM written progress reports and test results with recommended actions.

23. Oversee, approve, and coordinate all necessary training requirements as specified in the contract documents for the building Owner's operating personnel.

24. Review and approve preparation of O&M manuals for HVAC equipment (See Appendix A).

25. Submit completed commissioning manual to Owner and CM along with list/issue tracking log of all outstanding non-compliance items. Provide recommendations for improvement to equipment or operations.

Systems to Be Commissioned

1. See Appendix A for sample equipment/systems to be commissioned.
2. Verify once all individual systems are started, tested and balanced, tested for full range of functional performance, that all systems interface with each other as described in the sequence of operations and controls specifications and as defined by the A/E given different potential building occupancies. Develop tests and acceptance criteria for these building wide interface and coordination conditions in consultation with the A/E.

Scope of Work for Warranty Phase of Project- Must be included in the RFP Not to Exceed proposal amount. The CxC shall be responsible for providing commissioning services as described in the following paragraphs:

1. Coordinate and supervise required deficiency corrections and provide update to the final testing documentation for the Commissioning Record.

2. Coordinate and supervise required opposite season or deferred testing and commissioning.

3. Return to the site 10 months into the warranty period and review with facility staff the current building operation and the condition of outstanding issues related to the original and seasonal commissioning. Also interview facility staff and identify problems or concerns they have with operating the building as originally intended. Make suggestions for improvements and for recording these changes in the O&M manuals. Identify areas that may come under warranty service or under the original construction contract as well as identify which areas operate design intended, even though some change may be desirable. Assist facility staff in developing reports and documents and requests for services to remedy outstanding problems.

4. Re-commission any systems which need adjustment and demonstrate this effort to the Owner's staff to enhance their own maintenance abilities.

Allowances - Include an allowance within the professional's not to exceed proposal amount of $10,000 for work required by the Owner as directed by the CM. This allowance is for the benefit of the project and only to be expended given advance CM approval.

Report Preparation and Distribution - Document the locations of all observations in a concise manner. Twice monthly verbal reports are to be made to the Owner, A/E, and CM at jobsite. Provide 3 copies of the final report once directed by Owner and CM to release it.

Proposal Cost Intent - The CxC shall be engaged as a member of a professional services team and shall be relied upon by the Owner to manage their services in such a way as to complete all required services for the project within the not to exceed price agreed between the Owner and the CxC. Submit labor rates for proposed staff. Additional funds shall not be requested nor granted unless the CxC can demonstrate clearly to the satisfaction of the A/E and the CM, which the Consultant could not have reasonably foreseen such a cost or, unless both the CM and the A/E agree it is in the best interest of the project and make a recommendation to the Owner. It is presumed that CxC shall manage his own time on site efficiently. It is presumed that any out of pocket expenses, travel, lodging, document reproduction, overhead, profit, labor and material costs shall all be provided within the not to exceed proposal cost. The cost for commissioning plan preparation and fieldwork may be billed monthly on an hourly basis, as a part of the Consultant's not to exceed proposal.

Pro-forma Requirements - Entire commissioning plan shall be prepared under the supervision of a Registered Engineer. Consultant's Engineer shall visit the site and make his/her own site inspections to validate any on-site technical staff data as required. The Consultant will be contracted to the Owner under its standard professional services contract under supervision and coordination of the CM as the agent of the Owner. Standard insurance requirements shall be required, including GL, Auto, Worker Statutory, Completed Operations and professional liability coverage. Payment shall be made to the

Consultant monthly without retainage based upon a schedule of values to be attached to the proposal and approved by the CM and the Owner. The CxC's standard terms and conditions for delivery of service shall apply only if agreed to by the Owner and attached to the agreement. In no case shall they apply if they conflict with the terms of this RFQ. Provide only the services specified unless a written field order or change order is requested and issued.

The CxC response to this Request for Qualifications should include the following:

1. Executed proposal form without amendment or stipulation with proposed not to exceed proposal amount entered.
2. Proposed schedule of values and unit prices for directed additional services.
3. Consultant's statement of understanding of the project and ability to implement all the responsibilities defined herein this RFP (including the Appendices). Any cost saving ideas are welcome, but should be attached as voluntary alternates to the specified scope of work.
4. Response to the scope items described within this RFP.
5. Two – three references with contact names and phone numbers for projects of similar nature. Provide examples of as estimated/proposed and final cost result comparisons both in costs per square foot and total costs of these projects for the commissioning services.
6. Consultant's one page statement of why your firm is best suited to provide these services.

Questions regarding the requirements of this RFQ, including the attached Proposal Form, should be directed to: Jerry Brand at Granger Construction Co. at 734-944-1142 or 734-216-4230. Do not contact the Owner or the A/E directly. Thank you.

Sincerely,
Granger Construction Company

Jerald S. Brand
Senior Project Manager

Cc: Julianne Chard, AAPS
Ben Schneider, GCC
Richard Mitchell, MMA
Eric Sassak, TMP
Derek Crowe, PBA

Encl: Appendix A - Sample HVAC Commissioning Specification,
Appendix B - Proposal Form
Appendix C – Project Schedule
Appendix D – Project Cost Worksheet

Appendix A – SAMPLE HVAC Commissioning Specification

1. GENERAL

1.1 Overview

This section of the specification describes the process for commissioning HVAC AND CERTAIN RELATED systems, defines the responsibilities of the CxC and CM, and outlines the duties of other members of the commissioning team. The commissioning process shall be applied to all equipment, components, and systems as listed in Section 3, including specified interfaces to and from equipment and systems provided under other divisions.

1.2 Trade Contractors and Subcontractors

The appropriate trade contractors and their subcontractors shall be responsible for cooperating and coordinating their work with the CxC. Trade Contractors are contractors who have been awarded contracts by the Owner, who in turn has authorized the CM to issue said contracts and for the CM to hold these contracts. Trade Contractors in turn may engage other specialty firms to supplement their own expertise and these firms are defined as subcontractors. Trade Contractors shall also be responsible for carrying out all the physical activities required for physical installation of components and systems, for operating them during the commissioning process and for cooperating with the CxC in troubleshooting any problems that become apparent during the commissioning process.

1.3 Commissioning Consultant

The CxC shall be a professional service contract to the Owner.

2. THE COMMISSIONING PROCESS

2.1 The Commissioning Team

The commissioning team shall consist of:

- The CxC's representative (s), to be approved by the Owner
- The construction manager's representative (s), to be designated
- The control contractor's representative (s) - to be designated
- The testing, adjusting and balancing contractor's representative (s) - to be designated.
- The hydronics contractor's representative (s) - to be designated
- The sheet metal and air handling equipment contractor's representative (s) - to be designated
- The fire protection contractor's representative (s) - to be designated
- The electrical contractor's representative (s) - to be designated
- The A/E's representative - to be designated
- The mechanical engineer's representative (s) –Peter Basso Associates
- The electrical engineer's representative (s) – Peter Basso Associates
- The Owner's representative (s), to be designated

2.2 Commissioning Responsibilities

2.2.1 Construction Manager

The CM is contractually responsible to the Owner to plan and execute the delivery of the complete HVAC system as designed by the A/E. The CM shall engage expert trade contractors to put the work in place, and plan for the start up and commissioning of the HVAC and other defined systems. To assist in this effort, the Owner shall engage the expert planning assistance of a CxC who shall, in consultation with the CM and the A/E, develop this plan, supervise its execution and document it, as agent for the Owner without assuming the CM's contract responsibilities.

2.2.2 Commissioning Consultant

The CxC shall:

- Plan, organize, and implement commissioning process as specified in close coordination with CM,
- Prepare commissioning plan and ensure its distribution for review and comment of all members of commissioning team,
- Revise the commissioning plan as required following this review and comment and distribute it to all team members for use during construction,
- Review the operations and maintenance plans prepared by the mechanical contractors and provide comment to the CM, who shall in turn submit it to the A/E for their review and comment,
- Chair commissioning meetings and prepare and distribute minutes to all commissioning team members, whether or not they attended the meeting (wherever possible, e-mail transmission is desirable). All members of the team shall participate in commissioning activities as specified by the CM and the CxC. The CM and the CxC shall be respectful of time requirements and schedule meetings only as often as required and only invite those parties to a meeting who have a meaningful role to fulfill for that meeting, given that all meeting information is to be distributed in minutes,
- Schedule and coordinate commissioning activities among all members of the team but particularly among trade contractors, subcontractors, and suppliers in consultation with the CM,
- Assist trade contractors in carrying out all required system readiness checks and document results as checks are done,
- Observe or verify all start-ups and initial system operations tests and checks, which shall encompass all specified functional performance tests, ensuring results are documented as tests and checks are done,
- In cooperation with the controls contractor, ensure all control point checkouts are carried out to A/E's specification criteria before any adjustments are made and that all such control point checkouts are documented as the checks are done. The CxC shall verify any proposed adjustments to specified controls and sequence of operation specification criteria are reviewed with the A/E by controls contractor,
- In cooperation with testing, adjusting and balancing contractor, ensure all systems are balanced to A/E's specification criteria before adjustments are made and that all tests and balance adjustments are carried out and results documented as checks are done. The CxC shall verify any proposed adjustments to specified TAB specification criteria are reviewed with A/E by TAB contractor,
- In consultation with the A/E, ensure equipment and systems are operated for full range of functional performance verification purposes and document that they achieve the specified acceptance criteria. A/E shall define pass/fail criteria before tests are conducted and CxC shall provide these criteria as a part of the commissioning plan.
- The CxC as agent for the Owner, shall utilize its own review of the contract documents and its own expertise to attempt to resolve any problems that arise during commissioning, routinely advising all members of the team, particularly the A/E, as to the issue and its plan for resolution and document any such resolution. The CxC shall report any irresolvable issues to the CM and the A/E for direction and/or design resolution.
- Once system is successfully commissioned, the CxC shall prepare three copies of commissioning report documenting final status and test data of system components tested, stipulating adjustments made to specified criteria (reviewed with A/E), and submit them to the CM for A/E review/comment and Owner's use,
- Schedule all training with Owner staff and ensure all required instruction and demonstrations are provided to the Owner's designated operating staff.

2.2.2 Mechanical contractor

The mechanical contractor, and all his subcontractors and suppliers, shall cooperate with the CxC in carrying out the commissioning process. In this context, the mechanical contractor shall:

- Provide to the CM for review not later than six (6) months prior to substantial completion, one copy of the proposed operations and maintenance (O&M) manuals as specified for the review and comment of the A/E and CxC. The manuals shall have red colored pages with descriptions identifying missing information, to be inserted where start-up and other data not available. Upon receipt of the review comments, the mechanical contractor shall implement the changes required by the comments into the manuals. The mechanical contractor shall use these manuals as a meaningful part of the owner training process, adding and incorporating the start-up data as it is available and appropriate information from the commissioning process as it is completed. The mechanical contractor shall then prepare the specified three bound copies of the final O&M manuals for turnover with written transmittals requiring signature receipt not less than one (1) month prior to final completion.
- Mechanical contractor to provide start-up information and schedule input to the CxC for consideration in preparing the plan
- Mechanical contractor to provide training agenda and input to the CxC for consideration in preparing the training plan
- Provide expert labor, access, equipment and systems start-up as required and document start-up.
- Operate equipment and systems as required for both initial systems operations and full functional performance tests.
- Attend commissioning meetings, and correct action items arising from them, as required to allow the commissioning process to proceed on schedule.
- Provide instruction and demonstrations for the Owner's designated operating staff, in conjunction with the CxC, in order to meet all specified requirements in this regard. The mechanical contractor shall videotape this instruction.

2.2.3 A/E

The A/E shall provide a written description of the intent of design and system performance planned by the A/E for each functional space and each system, as required documenting the full functional performance and system acceptance criteria for each functional space and each system referring to the contract documents as appropriate.

The A/E will review the commissioning plan and offer a written review and comment on the plan to assure the commissioning plan executes the design intent as shown in the construction documents. The A/E shall produce bulletins or field orders as required to document any changes from the contract documents if the commissioning process presents any changes required to achieve the design intent.

During the functional performance phase of the commissioning process, the A/E will be on site to review commissioning documentation, witness functional performance tests, and verify acceptable performance or to declare performance unacceptable, as the case may be.

The A/E will also participate, as required in a reasonable number of on-site commissioning meetings, in problem solving review meetings and to satisfy themselves that the system is in fact substantially complete when commissioning is finished.

2.2.4 Owner

The Owner will ensure the availability of operating staff for all functional performance testing, scheduled instruction and demonstration sessions. This will be a time intensive process and the Owner shall plan his staffing accordingly. This staff will possess sufficient technical skills and knowledge: to receive the instruction offered, assure their own understanding and to operate and maintain the installation following

attendance at these sessions. The Owner's staff shall advise the CM immediately if questions are not responded to, or if the instructions are not complete, such that the CM can ensure all trade contractors comply with their obligation to fully explain and demonstrate the start-up, safe operation, shut down and maintenance of all equipment specified to have training provided.

2.3 Commissioning Phases

The design phase commissioning process shall be organized and carried out in four phases, as follows:

- Phase I – schematic design comment and review with RFQ submittal
- Phase 2 – design development comment and review
- Phase 3 – development of commissioning plan for Owner, CM and A/E review/comment incorporating same into construction document commissioning plan
- Phase 4 – response to bidders questions through CM

The on-site commissioning process shall be organized and carried out in four phases, as follows:

- Phase I - system readiness and start-up,
- Phase 2 - initial operation,
- Phase 3 - functional performance verification, and
- Phase 4 - demonstration and instruction.

Each phase is applicable to each separate system and its components, as listed in Section 3, including all related controls and specified interfaces to other divisions.

2.4 Commissioning Plan

Within it's preparation to this RFP; the CxC shall review the schematic design intent and provide comment and feedback to the Owner, CM and A/E to assure its understanding necessary to execute its responsibilities under this RFQ.

Within one (1) month of award of contract, the CxC shall review the design development documents and provide comment and feedback to the Owner, CM and A/E as to intended commissioning procedures with the A/E to assure its understanding necessary to execute its responsibilities under this RFQ.

Within three (3) months of award of contract, but in no event less than six (6) months before scheduled date of substantial completion for each functional construction zone, the CxC shall submit with information provided by and assistance of the commissioning team a detailed commissioning plan to the CM for approval by the A/E.

The commissioning plan shall contain the information necessary to document the commissioning process as it progresses from pre-start checks, to start-up and initial operation, and finally to functional performance verification of all systems. The commissioning plan must include detailed checklists with primary responsibilities defined relevant to guiding the carrying out and documenting of phases 1, 2, and 3 of the commissioning process. The design of these checklists should be such that the items to be checked, or the steps to be taken in functional performance testing, and any calculations required to interpret this data are clearly listed. The plan will thus streamline the process and make documentation of it efficient and easy.

The commissioning plan shall also contain a schedule of commissioning work, integrated with the CM's overall project schedule. This schedule shall show:

- Completion dates for each system or systems in each area of the building,
- Dates for testing, adjusting and balancing activities to be completed in each area of the building,
- Dates for controls installation completion and point checkout in each area of the building,
- Dates for carrying out phases 1 and 2 commissioning work for each system or group of systems,
- Submission dates for documentation required by the A/E prior to phase 3 verification, and

- Dates for carrying out phase 3 commissioning work.

2.5 Phase 1-Systems Readiness and Startup

Before starting any equipment or systems, complete the system readiness or pre-start checks in the commissioning plan and document the results. The following conditions and items shall be completed as applicable:

- Piping systems have been pressure tested as specified, found to be tight, with reports submitted,
- Piping systems have been flushed and cleaned as specified, any required reports submitted, and then filled or charged as applicable,
- Equipment has been lubricated to specification and manufacturer's recommendation,
- Air system cleaning is complete, construction filters have been cleaned or replaced and particulate filters have been installed,
- Vibration isolation and seismic restraints have been installed to specification and adjusted,
- Equipment drives have been aligned,
- Electrical services have been installed and checked,
- Control point checkouts have been completed.
- Safety controls have been installed and operation checked, and
- Major equipment start-up has been carried out by manufacturers representatives when specified (refer to equipment specification sections), and required startup reports completed and submitted.

All checks shall be documented on the relevant checklists as they are carried out. Deficiencies or incomplete work shall be corrected, and the checks repeated until the installation is ready for operation, before proceeding to Phase 2 of the process.

2.6 Phase 2-Initial Operations

In phase 2 of the commissioning process, the mechanical contractor, the controls contractor and the testing, adjusting and balancing contractor, with the CxC verifying, completes the testing, balancing, and calibration of all components and systems. They also operate all systems through all specified modes of operation, and test system responses to specified abnormal or emergency conditions.

Work carried out during this phase of commissioning shall include the following, as applicable (note that not all these activities are a direct part of the commissioning process, but they all need to be carried out during or prior to this phase of commissioning):

- Air systems balancing, including positioning of all balance dampers, adjustments to diffusers, registers, and grilles,
- Hydronic systems balancing, including positioning of all balance valves,
- Correction of problems revealed during balancing, including changes to fan speeds or blade pitch,
- Setting up and calibrating all automatic temperature controls devices, including adjustments to control valves and damper actuators,
- Setting up or programming controls for accurate response and precise sequencing to meet specified performance,
- With CxC verifying, the balancing contractor, and controls contractor working together, set up air flows and controls calibrations for variable volume terminal units and air valves where applicable,
- Ensuring final adjustments to vibration isolation and seismic restraints are carried out, and
- Checking operation of all fire dampers,

As was done in phase 1, all checks and tests shall be documented on the relevant checklists as they are carried out. Deficiencies or incomplete work shall be corrected, and the checks or tests repeated until correct installation and function has been confirmed and the installation is ready for A/E verification.

2.7 Phase 3- Functional Performance Verification

All equipment and systems shall be operated through the entire specified sequence of operations, as directed by the A/E for witnessing and verifying acceptable operation.

During this phase of commissioning, the following checks and tests may be required by the A/E and shall be allowed for within the CxC's commissioning plan:

- Checking the location and accessibility of all access panels,
- Operation of all controls system devices, both sensors and actuators,
- Proper physical response of all controlled devices and components to set point changes or other relevant adjustments,

2.8 Demonstrations and Instruction

The CxC shall assure the Owner's designated representatives have the opportunity to observe any or all of the systems functional performance tests as an important element in the operator familiarization and instruction process.

If outside air temperature, lack of full occupancy, or other factors prevent full performance testing of some functions, then testing, verifying and documenting the performance of these functions shall be carried out at an appropriate, and mutually agreed upon time, once the seasonal conditions allow, but as soon as is reasonably possible thereafter, during the 12 months after substantial completion.

Demonstration and instruction shall cover all equipment and systems, and their controls. Detailed requirements are listed in the various mechanical equipment specifications and specifically in the following sections of the specifications:

- Section 15900 Temperature Controls
- Section 15990 Testing, Adjusting & Balancing

3. EXECUTION

NOTE: The lists following have been edited to suit the scope of work for the Ann Arbor High School project. Before using this plan for any other project delete items that are not applicable and add new items that are part of the project. The following systems shall be commissioned:

3.1 HV AC Systems

Hot Water, Glycol Solution, Chilled Water, and Condenser Water Piping Systems: Review mechanical contractors' installation checks; pressure tests; expansion tanks and flow balancing verification.

Duct Systems: Review mechanical contractors' installation checks; flow balancing verification; leak testing as applicable.

Chiller(s): Installation checks; checkout and start-up by manufacturer's representative; performance measurements, including capacity, evaporator and condenser flows, motor amperage, and controls operation (e.g., staging and capacity modulation).

Cooling Tower(s): Installation checks; checkout and start-up by manufacturer's representative in conjunction with chiller; performance measurements, including sound, capacity, motor amperage, pan heater operation, makeup water, overflow, and capacity controls.

Refrigeration Compressor/Condensing Unit(s) including Heat Pump systems: Installation checks; checkout and start-up by manufacturer's representative as specified; performance measurements, including capacity, evaporator and condenser pressures, motor current draw, and controls operation.

Include pool dehumidifier, and other pool area environmental systems (excluding pool water treatment systems).

Boiler(s): Installation checks, boil out and chemical treatment, checkout and start-up by manufacturer's representative, performance measurements including combustion efficiency, capacity test, burner, and controls operation. Include circulating pumps, perimeter heating terminals, domestic water boiler and pool heater.

Pumps: Checks on alignment, rotation, motor current draw, flows, and pressures.

Hydronic Heating: Installation checks; performance measurements and adjustments, including flows, capacity, and control responses.

Supply, Return, Relief, and Exhaust Fans: Checks on installation (including dampers and other accessories), rotation, motor current draw, and airflows and pressures.

Air Handling Units (Packaged, Rooftop, and Built-up): Installation checks; checkout and start-up by manufacturer's representative for large factory fabricated units; capacity tests for heating, cooling, air flow, and static pressures; operation of all controls. Include all air handling systems, associated intakes, return fans and exhaust fans, heating and cooling coils, humidifiers, and controls.

Air Terminal Devices: Installation checks; for variable air volume (V A V) units, flow adjustments and calibration coordinated with controls and air balancing; controls operation, including flow modulation, reheat, controls responses. Spot check (20%) of terminal devices in each functional area of VAV/reheat terminal units, airflow control valves, coils units.

Fan-Coil Unit: Installation checks; performance and controls checks.

Controls and EMCS: Installation and operation of all devices; complete operation of all controls sequences in coordination with commissioning of all controlled systems including linkages to remote monitoring and controls sites.

3.2 Other Systems

Laboratory Exhaust Systems: Verify system operation with smoke tests on every lab hood and verify laboratory pressurization control systems function as specified

Variable Frequency Drives: Checks on current draw, coordination with supplied equipment, etc.

Plumbing: Checks on all metered plumbing elements (sinks, urinals, toilets, fountains).

Emergency generator, fire protection, smoke purge and fire alarm: These systems will be fully tested by the State Fire Marshall's office, so CxC is only responsible to coordinate and document the testing effort and verify they integrate into other fully commissioned systems as per design intent.

Electrical Systems: These systems will be fully tested by the State Electrical Inspector's office, so CxC is only responsible to coordinate and document the testing effort and verify they integrate into other fully commissioned systems as per design intent. However, particular emphasis on any occupancy sensors which control lighting and may also be used to interface with the HVAC systems will be within the responsibility of the CxC to commission.

Other Systems as identified by the CxC.

4.0 Source Acknowledgement

This commissioning specification draws from the SMACNA (Sheet Metal and Air Conditioning Contractors National Association) HVAC Systems Commissioning Manual. Granger Construction Company has

modified it for the benefit of our client and as an example of the minimum level of specification and service expected. As such no responsibility for any inaccuracies shall be attributed to SMACNA, its officers, membership, or agents.
The proposing CxC may submit based upon other appropriate design standards (e.g. ASHRAE, etc.) if requested within the RFQ or if stipulated by the proposing CxC.

Ann Arbor Public Schools

Construction Company

Appendix B – Bid Form for Ann Arbor Public Schools 2004 Bond Program Bid # 05-006-860

TO: Ann Arbor Public Schools
2555 So. State Street
Ann Arbor, MI 48106
Attn: Julianne Chard, Bond Director

FROM: **Name of Bidder:** _____

Business Address: _____

_____

Phone Number: _____

Our proposal for work identified in **Request for Proposal for Professional Commissioning Services** dated April 11, 2005 for the Ann Arbor High School Bid # 05-006-860 – Commissioning is as follows:

Design Phase Scope

1. Design Development $_____
2. Construction Documents $_____
3. Commissioning Plan and Specification $_____

Construction Phase Scope

4. Services from start through installation $_____
5. Services from equipment start through functional testing $_____
6. Training, troubleshoot and issue resolution $_____
7. Commissioning Plan Turnover $_____
8. Post completion return inspection/ re-commission $_____

Above costs are approximate per phase but in no case shall the sum of above elements exceed the following lump sum proposal amount:

Lump Sum Proposal not to exceed: **$**_____

The below bidder stipulates consistent with Michigan Law, it has no relationship with the Ann Arbor Public Schools superintendent of schools nor any member of the board of education, or if it does it is clearly

described below on this proposal bid form. On behalf of the bidder, the undersigned agrees to the provisions of the request for proposal documents without reservation or stipulation, and agrees to hold open this offer of service for 60 days from the date the proposals are due:

Company: _____

Signature: _____ Date: _____

Name: _____ Title: _____

GENERAL CONDITIONS (Do not need to attach to bid form – they are implicitly attached)

INDEPENDENT CONSULTANT. The Consultant shall be and operate as, an independent Consultant in the performance of this Contract. The Consultant shall have complete charge of the personnel engaged in the performance of the Work, and all persons employed by the Consultant shall be employees of said Consultant and not employees of the Contractor in any respect.

COMPLIANCE WITH LAWS. The Consultant shall comply with all applicable laws and regulations, Federal, State, and any political subdivision thereof, including but not limited to, unemployment and workmen's compensation, occupational safety, equal employment and affirmative action and wage and price laws insofar as applicable to the performance of the Work.

SUBCONTRACTS. The Consultant shall not subcontract any of the Work to be performed by it hereunder without the express written consent of the Owner.

INDEMNIFICATION. The Consultant agrees to defend, indemnify and hold harmless the Owner and the Construction Manager, its directors, officers, and employees from and against any and all liabilities, damages, losses, claims or suits, including costs and attorneys' fees, for or on account of any kind of injury to person bodily or otherwise, or death, or damage to or destruction of property, or any other circumstances, sustained by Owner or others (including employees of the Consultant), in any way arising out of services and operations performed hereunder by the Consultant, including the Owner's reliance on or use of the services or products provided by the Consultant. The Consultant shall not be liable for loss or damage attributable solely to the negligence of Owner or the Construction Manager.

INSURANCE. Consultant shall furnish Owner and Construction Manager the certificates of insurance for workmen's compensation, public liability, and property damage, including automobile coverage in the amounts fixed by the Owner. The policies of insurance shall be in such form and shall be issued by such company or companies as may be satisfactory to Owner. Owner and such additional persons and entities as may be deemed to have an exposure to liability as a result of the performance of Consultant's work shall be named as additional insureds.

Consultant also will name Owner and Construction Manager as an additional insured for General Liability coverage.

In addition to the foregoing, the Consultant shall maintain Professional Liability "errors and omissions" insurance in the form and for the coverages satisfactory to Owner and Construction Manager.

The Owner and Construction Manager and Consultant waive all rights against each other and against the Owner, the Architect/Engineer, Subcontractors, and other consultants for damages caused by fire or other perils to the extent covered by Builder's Risk or any other property insurance, except such rights as they may have to the proceeds of such insurance.

NONDISCLOSURE. The Consultant agrees that it will not divulge to third parties without the written consent of the Owner and Construction Manager any information obtained from or through the Owner and Construction Manager in connection with the performance of this Contract.

CHANGES. The Consultant shall make any and all changes in the Work without invalidating this Contract when specifically ordered to do so in writing by the Owner and Construction Manager. Consultant, prior to the commencement of such changed or revised work, shall submit promptly to the Owner and Construction Manager, a written cost or credit proposal for such revised work. If the Owner and Construction Manager and Consultant shall not be able to agree as to the amount, either in consideration of time or money to be allowed or deducted, it shall, nevertheless, be the duty of

Consultant, upon written notice from the Owner and Construction Manager, to immediately proceed with such alteration or change, and Consultant shall be compensated the reasonable value of such work.

ARBITRATION. All claims, disputes, and other matters in question arising out of, or relating to, this Contract or the breach thereof, shall be decided by arbitration in accordance with the Construction Industry Arbitration Rules of the American Arbitration Association unless the parties mutually agree otherwise. This agreement to arbitrate shall be specifically enforceable under the prevailing arbitration law. The award rendered by the arbitrators shall be final, and judgment may be entered upon it in accordance with applicable law in any court having jurisdiction thereof.

Notice of the demand for arbitration shall be filed in writing with the other party and with the American Arbitration Association. The demand for arbitration shall be made within a reasonable time after the claim, dispute, or other matter in question has arisen, but in no event shall it be made after substantial completion of the Project for which this Contract is awarded.

TERMINATION. The Owner and Construction Manager shall have the right to terminate the Contract at any time for any reason by giving the Consultant two (2) days' prior written notice to such effect. Owner shall pay to the Consultant in full satisfaction and discharge of all amounts owing to the Consultant under the Contract an amount equal to the cost of all Work performed by the Consultant up to such termination date, less all amounts previously paid to the Consultant on account of the Contract Price. The Consultant shall submit to the Owner and Construction Manager its statement for the aforesaid amount, in such reasonable detail as the Owner and Construction Manager shall request, within thirty (30) days after such date of termination. The Owner and Construction Manager shall not be liable to the Consultant for any damages on account of such termination for loss of anticipated future profits with respect to the remainder of the work.

ACCOUNTING. During the period of this Contract, the Consultant shall maintain books of accounts of its expenses and charges in connection with this Contract in accordance with generally accepted accounting principles and practices. The Consultant shall bill in a format acceptable to the Owner and Construction Manager. AIA documents G702 and G703 are acceptable for billing. If a Contract value is estimated, written authorization to exceed the estimate is required before exceeding the limit. The Owner and Construction Manager shall at reasonable times have access to these books and accounts to the extent required to verify all invoices submitted hereunder by the Consultant.

ADDITIONAL INSURANCE REQUIREMENTS

CONSULTANT'S LIABILITY INSURANCE

The Consultant shall purchase and maintain, in a company or companies rated not less than A- by A.M. Best, such insurance as will protect him/her from claims set forth below which may arise out of or result from the Consultant's operations under the contract, whether such operations be by himself/herself or by any subcontractor or by anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable: This insurance protection shall include;

1. *Claims under worker's compensation, disability benefit and other similar employee benefit act. A non-resident Consultant shall have insurance for benefits payable under Michigan's Worker's Compensation Law for any employee resident of and hired in Michigan; and as respects any other employee protected Worker's Compensation Laws of any other state the Consultant shall have insurance or participate in a mandatory state fund in Nevada, North Dakota, Ohio, Washington, West Virginia, and Wyoming, to cover the benefits payable to any such employee;*

2. *Worker's Compensation: Claims for damages because of bodily injury, occupational sickness or disease, or death of his/her employees subject to limits of not less than $500,000;*

3. *General Liability: This type of insurance must be on an "occurrence" basis only. The general aggregate limit must be a minimum of $2 million. Product-completed operations aggregate must be*

$2 million. Personal and advertising injuries must be a minimum of $1 million and each occurrence must be a minimum of $1 million.

4. *Automobile Liability: Every auto must be covered. Coverage shall be a combined single limit (CSL) of a minimum of $1 million. If CSL coverage is not described, then bodily injury per person, bodily injury per accident and property damage coverage must be carried with a minimum of $1 million in coverage.*

5. *Excess Liability: Excess liability coverage is in addition to general liability coverage, automobile liability coverage and employer's liability coverage. The excess liability coverage shall increase the other forms of liability coverage by at least $1 million.*

The foregoing policies shall contain a provision that coverages afforded under the policies will not be canceled until at least thirty (30) days prior written notice has been given to the Owner. Certificates of insurance acceptable to the Owner and Construction Manager shall be filed with the Owner and Construction Manager not later than seven (7) days after written Notice to Proceed or Contract Agreement is issued. In no case shall the Work commence prior to receipt of said Certificates of Insurance by the Owner and Construction Manager. All such Certificates of Insurance evidencing specified coverages must name the Owner and Construction Manager as additional insured for the Project and location. Upon request, the Consultant shall allow the Owner and Construction Manager to examine the actual policies. The insurance provider shall be a United States of America resident firm, incorporated under the laws of the States and licensed to do business in the State of Michigan. Upon request of the Owner and Construction Manager, the insurance provider shall provide full financial disclosure as to its financial conditions (assets, liabilities, stockholders, equity, etc.) in a form satisfactory to the Owner and Construction Manager.